# COURSE SPECIFICATIONS

# Faculty of Pharmacy

## Fifth Year – Second Term

## 2012-2013

# CONTENTS:

# Course Specification

# Applied Pharmacognosy 2

# Fifth Year-Second Term

# 2012-2013

# Course Specification of Applied Pharmacognosy 2

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**University: Zagazig Faculty: Pharmacy**

## A- Course specifications:

Program (s) on which the course is given: B. Pharm. Sci.

Major or Minor element of programs: Major

Department offering the program: -------

Department offering the course: Pharmacognosy

Academic year Level: Fifth year /second term

Date of specification approval: 16 September 2012

## B- Basic information:

Title: Applied Pharmacognosy-2 Code: 751

Credit Hours: ---

Lectures: 2 hrs/week

Practical: 3.5 hrs/week

Tutorials: ---

Total: 5.5 hrs/week

## C- Professional information:

### 1-Overall aim of the course:

On completion of the course, the student will be able to illustrate the fundamental knowledge about herbal medicine including preparation, identity, efficacy, standardization and its relation to conventional medicine. In addition, the student will be able to use herbal medications in some common health problems, and will know its toxicological aspects, regulatory laws of production and forensic pharmacognosy.

## 2-Intended Learning Outcomes Applied Pharmacognosy II (ILOs):

| | |
|---|---|
| **A- Knowledge and Understanding** | |
| a1 | Illustrate the principles of alternative medicine (history and forms) and its relation to conventional medicine. |
| a2 | Outline the principles of herbal medicine preparation, identification, efficacy and standardization. |
| a3 | Summarize the principles of using some herbal medications to relief some common health problems e.g. GIT, cardiovascular, respiratory, urinary, ….etc |
| a4 | Demonstrate principles and approaches about narcotic drugs, toxicological aspects of herbal medicines, its concomitant use with conventional medicine, regulations of its production and forensic pharmacognosy. |
| a5 | Describe properties of formulations of herbal medications |
| a6 | Identify pharmacological properties, adverse reactions and contraindications of some herbal medications used in some specific health problems; |
| **B- Professional and Practical skills** | |
| b1 | Diagnose simple health problems |
| b2 | Describe a herbal remedy for treatment of common health problems |
| b3 | Practice patient counseling by using case study |
| b4 | Detect natural poisons in biological samples using forensic pharmacognosy. |
| **C- Intellectual skills** | |
| c1 | Apply guidelines in preparation, identification and standardization of herbal medicine. |
| c2 | Suggest appropriate formulas for treatment of common diseases |
| c3 | Analyze information using scientific and library based knowledge for using herbal medicine as an alternative medicine |
| **D- General and Transferable skills** | |
| d1 | Reprocess information from different herbal medicine sources |
| d2 | Work effectively as a member of a team |
| d3 | Write reports and present it**.** |
| d4 | Demonstrate decision making and problem solving in using of herbal medicine as an alternative medicine. |

## D-Course Content:

| Week No. | Lecture contents (2hrs/lec.) | Practical session (3.5 hrs/lab) |
|---|---|---|
| 1 | -Definition, history and forms of alternative medicine<br>-Herbal medicine versus conventional medicine | - An introduction for use of herbal medicine for treatment of simple health problems<br>-Herbal remedies used for digestive and gastric disorders<br>**Activity**: Search for market preparations used as laxative and astringent |
| 2 | -Preparation of herbal medications<br>- Identity, efficacy and standardization of herbal medications<br>-Drug approval | - Herbal remedies used as laxatives<br>- Herbal remedies used as astringent<br>**Activity**: Search for market preparations used as anthelmintic |
| 3 | -Herbal remedies for GIT disorders<br>(mouth, stomach, laxative, astringent) | - Herbal remedies used as anthelmintic<br>- Herbal remedies used for hemorrhoids |

| | | |
|---|---|---|
| | | **Activity**: Search for market preparations used for hepatic disorders |
| **4** | -Herbal remedies for GIT disorders (anthelmintic, hemorrhoids…..etc)<br>- Herbal medications for hepatic disorders | -Drugs used for hepatic disorders<br>**Activity**: Search for market preparations used for circulatory disorders |
| **5** | -Herbal medications for circulatory disorders | - Herbal medications for circulatory disorders<br>**Activity**: Search for market preparations used for renal disorders |
| **6** | -Herbal medications for renal problems<br>-Herbal medications for diabetes | -Drugs used for renal disorders<br>**Activity**: Search for market preparations used as anti-anxiety |
| **7** | -Herbal medications for arthritis<br>-Herbal medications for cancer (prevention/ treatment) | -Drugs used for anxiety and as tranquilizers<br>**Activity**: Search for |

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|---|---|---|
| | | market preparations used for respiratory disorders |
| **8** | -Herbal remedies for colds and flue<br>-Herbal remedies for respiratory tract problems | -Drugs used for cold and other respiratory disorders |
| **9** | -Herbal remedies for dermatologic use | -Applications on forensic pharmacognosy |
| **10** | -Narcotic drugs.<br>-Toxicological aspects of herbal medicine | -Applications on forensic pharmacognosy |
| **11** | --Regulatory laws for production of herbal remedies | Revision |
| **12** | -Forensic Pharmacognosy | **-Final practical exam** |
| **13** | -Forensic Pharmacognosy | **-Final practical exam** |
| **14** | -Revision | |

## E-Teaching and Learning Methods:

- Lectures

- Practical session and tutorials
- Self learning (Activities….)

## F-Student Assessment methods:

1-Written exam **to assess:** a1, a2, a3, a4, a5, a6, c1, c2

2-Practical exam and activity **to assess:** a3, a6, b1, b2, b3, b4, c2, c3 d1, d2, d3, d4

4-Oral exam **to assess:** a1, a2, a3, a4, a5, a6, d4.

**Assessment schedule:**

| | |
|---|---|
| **Assessment (1):** Written exam | Week 16 |
| **Assessment (2):** Activity | Week 1-week 7 |
| **Assessment (3):** Practical exams | Week 12 and 13 |
| **Assessment (4):** Oral exam | Week 16 |

**Weighting of Assessment:**

| Assessment method | Marks | Percentage |
|---|---|---|
| **Written exam** | 60 | 60% |
| **Practical exam and activities** | 25 | 25% |
| **Oral exam** | 15 | 15% |
| **TOTAL** | **100** | **100%** |

## G-Facilities required for teaching and learning:

- **For lectures:** Black (white) boards, overhead projectors, data show.
- **For Labs:** Chemicals, glassware, instruments, digital balances, water bathes and data show.

## H-List of references:

### 1-Couse Notes:

- Student book of applied pharmacognosy II approved by Pharmacognosy department (2012).

### 2-Essential Books (Text Books):

i-Pharmacognosy; Evans,W.C.;Saunders-Elsevier(2009).

ii-The healing power of herbs; Murray, M.T., Randorn House(2004)

**3-Recommended Books:**

i-The honest herbal ;Varror, T. and Foster, S. ;Haworth Herbal Press ,Binghamton, NY.(1999).

ii-Herbal medicine: a clinical guide ; Miller, L. and Murray, W.; Pharmaceutical Products Press ,Binghamton, NY.(1998).

**4-Periodicals and websites:**

i-Journal of Natural Products

ii-J. Ethnopharmacology

iii-Planta Medica

iv-Phytoterapia

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**Course Coordinators: Prof. Dr. Assem Elshazly**

**Head of department: Prof. Dr. Sameeh EL Dahmi**

**Date: تم إعتماد توصيف المقرر من مجلس القسم بتاريخ 16 / 9 /2012 م**

# Matrix I of Applied Pharmacognosy-2 Course

| Course Contents | | ILOs of Applied Pharmacognosy-2 course | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Knowledge and understanding | | | | | | Professional and practical skills | | | | Intellectual skills | | | Transferable and general skills | | | |
| | | a1 | a2 | a3 | a4 | a5 | a6 | b1 | b2 | b3 | b4 | c1 | c2 | c3 | d1 | d2 | d3 | d4 |
| Lectures | | | | | | | | | | | | | | | | | | |
| 1 | -Definition, history and forms of alternative medicine<br>-Herbal medicine versus conventional medicine | x | | | | | | | | | | | | | | | | |
| 2 | -Preparation of herbal medications<br>-Drug approval | | x | | | | | | | | | x | | | | | | |
| 3 | -Herbal remedies for GIT disorders (mouth, stomach, laxative, astringent) | | | x | | | | | | | | | x | | | | | |
| 4 | -Herbal remedies for GIT disorders (anthelmintic, hemorrhoids…..etc)<br>- Herbal medications for hepatic disorders | | | x | | | | | | | | | x | | | | | |

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| 5 | -Herbal medications for circulatory disorders | | | x | | | | | | | | | x | | | | | |
| 6 | -Herbal medications for renal problems<br>-Herbal medications for diabetes | | | x | | | | | | | | | x | | | | | |
| 7 | -Herbal medications for arthritis<br>-Herbal medications for cancer (prevention/ treatment) | | | x | | | | | | | | | x | | | | | |
| 8 | -Herbal remedies for colds and flue<br>-Herbal remedies for respiratory tract problems | | | x | | | | | | | | | x | | | | | |
| 9 | -Herbal remedies for dermatologic use | | | x | | | | | | | | | x | | | | | |
| 10 | -Narcotic drugs.<br>-Toxicological aspects of herbal medicine | | | | x | | | | | | | | | | | | | |

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| | | | | | | | | | | | | | | | | | | |
| 11 | -Regulatory laws for production of herbal remedies | | | | | x | | | | | | | | | | | | |
| 12 | -Forensic Pharmacognosy | | | | | | x | | | | | | | | | | | |
| 13 | -Forensic Pharmacognosy | | | | | | x | | | | | | | | | | | |
| 14 | -Revision | | | | | | | | | | | | | | | | | |
| Practical sessions | | | | | | | | | | | | | | | | | | |
| 1 | - An introduction for use of herbal medicine for treatment of simple health problems<br>-Herbal remedies used for digestive and gastric disorders<br>**Activity**: Search for market preparations used as laxative and astringent | | | | | | | x | x | x | | | x | x | x | x | x | X |
| 2 | - Herbal remedies used as laxatives<br>- Herbal remedies used as astringent<br>**Activity**: Search for market preparations used as | | | | | | | x | x | x | | | x | x | x | x | x | x |

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| | anthelmintic | | | | | | | | | | | | | | | | | |
| 3 | - Herbal remedies used as anthelmintic<br>- Herbal remedies used for hemorrhoids<br>**Activity**: Search for market preparations used for hepatic disorders | | | | | | x | x | x | | | x | x | x | x | x | X |
| 4 | -Drugs used for hepatic disorders<br>**Activity**: Search for market preparations used for circulatory disorders | | | | | | x | x | x | | | x | x | x | x | x | X |
| 5 | - Herbal medications for circulatory disorders<br>**Activity**: Search for market preparations used for renal disorders | | | | | | x | x | x | | | x | x | x | x | x | X |
| 6 | - Drugs used for renal disorders<br>**Activity**: Search for market preparations used as anti-anxiety | | | | | | x | x | x | | | x | x | x | x | x | X |

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| **7** | -Drugs used for anxiety and as tranquilizers **Activity**: Search for market preparations used for respiratory disorders | | | | | | | x | x | x | | | x | x | x | x | x | x |
| **8** | -Drugs used for cold and other respiratory disorders | | | | | | | x | x | x | | | x | x | | | | |
| **9** | -Applications on forensic pharmacognosy | | | | | | | | | | x | | | | | | | |
| **10** | -Applications on forensic pharmacognosy | | | | | | | | | | x | | | | | | | |
| **11** | Revision | | | | | | | x | x | x | x | | | | | | | |
| **12** | -Final practical exam | | | | | | | x | x | x | x | | | | | | | |
| **13** | -Final practical exam | | | | | | | x | x | x | x | | | | | | | |

# Matrix II of Applied Pharmacognosy-2

| National Academic Reference Standards (NARS) | | Program ILOs | Course ILOs | Course contents | Sources | Teaching and learning methods | | | Methods of assessment | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Lecture | Practical session | Self learning | Written exam | Practical exam | Oral exam |
| **Lectures** | | | | | | | | | | | |
| 2.15 | Basis of complementary and alternative medicine. | A32 | a1 | -Definition, history and forms of alternative medicine<br>-Herbal medicine versus conventional medicine | Student book | x | | | x | | X |
| | | | a2 | -Preparation of herbal medications<br>-Drug approval | Student book | x | | | x | | X |
| 2.1 | Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice. | A8 | a3 | -Herbal remedies for GIT disorders (mouth, stomach, laxative, astringent).<br>-Herbal remedies for GIT disorders (anthelmintic, | Student book | x | | | x | | x |

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| | | | | hemorrhoids…..etc)<br>- Herbal medications for hepatic disorders<br>-Herbal medications for circulatory disorders<br>-Herbal medications for renal problems<br>-Herbal medications for diabetes<br>-Herbal medications for arthritis<br>-Herbal medications for cancer (prevention/ treatment)<br>-Herbal remedies for colds and flue<br>-Herbal remedies for respiratory tract problems<br>-Herbal remedies for dermatologic use | | | | | | |

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| | | | a4 | -Narcotic drugs.<br>-Toxicological aspects of herbal medicine | Student book | x | | | x | | X |
| | | | a5 | - Regulatory laws for production of herbal remedies | Student book | x | | | x | | X |
| **2.16** | Toxic profile of drugs and other xenobiotics including sources, identification, symptoms, management control and first aid measures. | A33 | a6 | -Forensic Pharmacognosy | Student book | x | | | x | | X |
| **4.5** | Select the appropriate methods of isolation, synthesis, purification, identification, and standardization of active substances from different origins. | C8 | c1 | -Preparation of herbal medications<br>-Drug approval | Student book | x | | | x | | X |

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| **4.9** | Utilize the pharmacological basis of therapeutics in the proper selection and use of drugs in various disease conditions. | C12 | c2 | -Herbal remedies for GIT disorders (mouth, stomach, laxative, astringent).<br>-Herbal remedies for GIT disorders (anthelmintic, hemorrhoids…..etc)<br>- Herbal medications for hepatic disorders<br>-Herbal medications for circulatory disorders<br>-Herbal medications for renal problems<br>-Herbal medications for diabetes<br>-Herbal medications for arthritis<br>-Herbal medications for cancer (prevention/ treatment)<br>-Herbal remedies for colds and flue<br>-Herbal remedies for respiratory tract problems<br>-Herbal remedies for | Student book and practical note | x | x | | x | x | x |

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| | | | | dermatologic use | | | | | | | |
| **Practical sessions** | | | | | | | | | | | |
| **3.5** | Select medicines based on understanding etiology and path physiology of diseases. | B7 | b1<br>b2<br>b3 | - An introduction for use of herbal medicine for treatment of simple health problems<br>-Herbal remedies used for digestive and gastric disorders<br>- Herbal remedies used as laxatives<br>- Herbal remedies used as astringent<br>- Herbal remedies used as anthelmintic<br>- Herbal remedies used for hemorrhoids<br>-Drugs used for hepatic | Practical note | | x | | | x | |

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| | | | | disorders<br>- Herbal medications for circulatory disorders<br>- Drugs used for renal disorders<br>-Drugs used for anxiety and as tranquilizers<br>-Drugs used for cold and other respiratory disorders | | | | | | | |
| **3.7** | Assess toxicity profiles of different xenobiotics and detect poisons in biological specimens | B12 | b4 | -Applications on forensic pharmacognosy | Practical note | | x | | | x | |
| **4.9** | Utilize the pharmacological basis of therapeutics in the proper selection and use of drugs in various disease conditions. | C12 | c2 | -Herbal remedies for GIT disorders (mouth, stomach, laxative, astringent).<br>-Herbal remedies for GIT disorders (anthelmintic, hemorrhoids…..etc)<br>- Herbal medications for hepatic disorders<br>-Herbal medications for circulatory disorders | Student book and practical note | x | x | | x | x | x |

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| | | | | -Herbal medications for renal problems<br>-Herbal medications for diabetes<br>-Herbal medications for arthritis<br>-Herbal medications for cancer (prevention/ treatment)<br>-Herbal remedies for colds and flue<br>-Herbal remedies for respiratory tract problems<br>-Herbal remedies for dermatologic use | | | | | | |
| **4.14** | Analyze and evaluate evidence-based information needed in pharmacy practice. | C17 | c3 | - Search for market preparations used as laxative and astringent.<br>- Search for market preparations used as anthelmintic<br>- Search for market preparations used for hepatic disorders<br>- Search for market preparations used for circulatory disorders<br>- Search for market | Internet and essential recommended books. | | | x | | | |

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| | | | | preparations used for renal disorders<br>- Search for market preparations used as anti-anxiety<br>- Search for market preparations used for respiratory disorders | | | | | | | |
| **5.2** | Retrieve and evaluate information from different sources to improve professional competencies | D3 | d1 | - Search for market preparations used as laxative and astringent.<br>- Search for market preparations used as anthelmintic<br>- Search for market preparations used for hepatic disorders<br>- Search for market preparations used for circulatory disorders<br>- Search for market preparations used for renal disorders<br>- Search for market preparations used as anti-anxiety<br>- Search for market preparations used for respiratory disorders | Internet, essential and recommended books. | | | x | | | |

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| **5.3** | Work effectively in a team | D4 | d2 | - Search for market preparations used as laxative and astringent.<br>- Search for market preparations used as anthelmintic<br>- Search for market preparations used for hepatic disorders<br>- Search for market preparations used for circulatory disorders<br>- Search for market preparations used for renal disorders<br>- Search for market preparations used as anti-anxiety<br>- Search for market preparations used for respiratory disorders | Internet, essential and recommended books. | | | x | | | |
| **5.9** | Implement writing and presentation skills. | D11 | d3 | - Search for market preparations used as laxative and astringent.<br>- Search for market preparations used as anthelmintic<br>- Search for market preparations used for hepatic disorders<br>- Search for market | Internet, essential and recommended books. | | | x | | | |

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| | | | | preparations used for circulatory disorders<br>- Search for market preparations used for renal disorders<br>- Search for market preparations used as anti-anxiety<br>- Search for market preparations used for respiratory disorders | | | | | | | |
| **5.10** | Demonstrate critical thinking, problem-solving and decision-making abilities | D12 | d4 | -Herbal remedies for GIT disorders<br>(mouth, stomach, laxative, astringent).<br>-Herbal remedies for GIT disorders<br>(anthelmintic, hemorrhoids…..etc)<br>- Herbal medications for hepatic disorders<br>-Herbal medications for circulatory disorders<br>-Herbal medications for renal problems<br>-Herbal medications for diabetes<br>-Herbal medications for | Internet, essential and recommended books. | | | x | | | |

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| | | | | arthritis<br>-Herbal medications for cancer (prevention/ treatment)<br>-Herbal remedies for colds and flue<br>-Herbal remedies for respiratory tract problems<br>-Herbal remedies for dermatologic use | | | | | | | |

# Matrix III of Applied Pharmacognosy-2 Course

| Week No. | Course content | Source | Teaching and learning methods | | | Assessment Methods | | |
|---|---|---|---|---|---|---|---|---|
| | | | Lecture | Practical session | Self learning | Written exam | Practical exam | Oral exam |
| 1 | • Definition, history and forms of alternative medicine.<br>•Herbal medicine versus conventional medicine. | Student book | x | | | x | | x |
| | - An introduction for use of herbal medicine for treatment of simple health problems<br>-Herbal remedies used for digestive and gastric disorders<br>**Activity**: Search for market preparations used as laxative and astringent | Practical note | | x | | | | |
| 2 | • Preparation of herbal medications.<br>• Drug approval. | Student book | x | | | x | | x |
| | - Herbal remedies used as laxatives<br>- Herbal remedies used as astringent<br>**Activity**: Search for market preparations used as anthelmintic | Practical note | | x | x | | x | |

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|---|---|---|---|---|---|---|---|---|
| | Herbal remedies for GIT disorders. (mouth, stomach, laxative, astringent). | Student book | x | | | x | | x |
| 3 | - Herbal remedies used as anthelmintic<br>- Herbal remedies used for hemorrhoids<br>**Activity**: Search for market preparations used for hepatic disorders | Practical note<br>Recommend -ed book | | x | x | | x | |
| 4 | • Herbal remedies for GIT disorders. (anthelmintic, hemorrhoids, ).<br>• Herbal medications for hepatic disorders. | Student book | x | | | x | | x |
| | -Drugs used for hepatic disorders<br>**Activity**: Search for market preparations used for circulatory disorders | Practical note<br>Recommend -ed book | | x | x | | x | |
| 5 | • Herbal medications for circulatory disorders. | Student book | x | | | x | | x |
| | - Herbal medications for circulatory disorders<br>**Activity**: Search for market preparations used for renal disorders | Practical note<br>Recommend -ed book | | x | x | | x | |
| 6 | • Herbal medications for renal problems.<br>• Herbal medications for diabetes. | Student book | x | | | x | | x |

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|---|---|---|---|---|---|---|---|---|
| | - Drugs used for renal disorders<br>**Activity**: Search for market preparations used as anti-anxiety | Practical note | | x | x | | x | |
| 7 | • Herbal medications for arthritis.<br>• Herbal medications for cancer(prevention/ treatment). | Student book | x | | | x | | x |
| | -Drugs used for anxiety and as tranquilizers<br>**Activity**: Search for market preparations used for respiratory disorders | Practical note | | x | x | | x | |
| 8 | • Herbal remedies for cold and flu.<br>• Herbal remedies for respiratory tract problems. | Student book | x | | | x | | x |
| | -Drugs used for cold and other respiratory disorders | Practical note | | x | | | x | |
| 9 | • Herbal remedies for dermatologic use. | Student book | x | | | x | | x |
| | • Application of forensic pharmacognosy | Practical note | | x | | | x | |
| 10 | • Narcotic drugs.<br>• Toxicological aspects of herbal medicine. | Student book | x | | | x | | x |
| | • Application of forensic pharmacognosy | Practical note | | x | | | x | |

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|---|---|---|---|---|---|---|---|---|
| 11 | • Regulatory laws for production of herbal remedies. | Student book | x | | | x | | x |
| | • Revision | Practical note | | | | | | |
| 12 | • Forensic Pharmacognosy. | Student book | x | | | x | | x |
| 13 | • Forensic Pharmacognosy. | Student book | x | | | x | | x |
| 14 | Revision | Student book | x | | | x | | |

**Course Coordinators:** **Prof. Dr. Assem Elshazly**

**Head of department:** **Prof. Dr. Sameeh EL Dahmi**

**Date:** **تم إعتماد توصيف المقرر من مجلس القسم بتاريخ 16 / 9 /2012 م**

# Course Specification

# Industrial Pharmacy-2

# Fifth Year-Second Term

# 2012-2013

# Course specification of Industrial pharmacy-2

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**University: Zagazig** **Faculty: Pharmacy**

## A- Course specifications:

Program (s) on which the course is given: B. Pharm. Sci.

Major or Minor element of programs: Major

Department offering the program: -------

Department offering the course: Pharmaceutics department

Academic year Level: Fifth year/Second term

Date of specification approval: 3 September 2012

## B- Basic information:

Title: Industrial pharmacy-2 Code: 651

Credit Hours: ---

Lectures: 2 hrs/week

Practical: 2 hrs/week

Tutorials: ---

Total: 4 hrs/week

## C- Professional information:

### 1-Overall aim of the course

On completion of the course, the student will be able to illustrate the properties and manufacturing of tablets, packaging materials as well as mixing process.

## 2- Intended Learning Outcomes of Industrial pharmacy-2 (ILOs)

| | |
|---|---|
| **A- Knowledge and Understanding** | |
| a1 | Demonstrate different types of tablets |
| a2 | Mention composition of each type of tablets |
| a3 | Enumerate instruments used in preparation of tablets and for particle size reduction |
| a4 | Explain the requirements for GMP |
| **B- Professional and Practical skills** | |
| $b_1$ | Apply the principles of machines used in manufacturing of compressed tablet |
| $b_2$ | Detect pharmaceutical application particle size reduction& GMP |
| **C- Intellectual skills** | |
| c1 | Employ requirement of GMP for quality management |
| c2 | Suggest guides to GMP for medicinal products |
| c3 | Analyze techniques of quality control |
| **D- General and Transferable skills** | |
| d1 | Use tests of evaluation of tablets within team work |
| $d_2$ | Adopt techniques of quality control within team work |

## D- Contents:

| Week No. | Lecture contents (2 hrs/lec.) | Practical session (2hrs/lab) |
|---|---|---|
| 1 | - Types and classes of tablets | - Revision on types and classes of tablets and tablets used to prepare solutions |
| 2 | - Manufacturing of compressed tablet | - Revision on manufacturing of compressed tablet |
| 3 | - Methods of tablet manufacturing | - Revision on methods of tablet manufacturing |
| 4 | - Evaluation of tablets | - Revision on evaluation of tablets |
| 5 | - Types of tablet coating film, coating solution and film coating process | - Revision on types of tablet coating film, coating solution and film coating process |
| 6 | - Requirements for a satisfactory packaging materials | **- Practical exam-1** |
| 7 | - Containers and closures | - Revision on requirements for a satisfactory package and packaging materials |
| 8 | - Requirements of GMP and quality management | - Revision on containers and closures<br>**- Activity** |
| 9 | - Guides to GMP for medicinal products | - Revision on requirements of GMP and quality management |
| 10 | - Quality control | - Revision on guides to GMP for medicinal products |
| 11 | - Particle size reduction and analysis | - Revision on quality control<br>- Revision on particle size reduction and analysis |
| 12 | - Particle size reduction and analysis | **- Practical exam-2** |
| 13 | - Particle size reduction and analysis | |
| 14 | - Revision | |
| 15 | -Open Discussion | |

## E- Teaching and Learning Methods:

- Lectures
- Practical session
- Self learning (Activities, open discussion)

## F- Student Assessment methods:

1-Written exam to assess: a1, a2, a3, a4, c1, c2, c3, d1, d2

2- Activity to assess: b2, c1

2-Practical exam to assess: b1, b2, c1, c2

3-Oral exam to assess: a1, a1, a2, a3, a4, c1, c2, c3, d1, d2

### Assessment schedule

| | |
|---|---|
| **Assessment (1):** Written exam | Week 16 |
| **Assessment (2):** Activity | Week 8 |
| **Assessment (3):** Practical exams | Week 6, 12 |
| **Assessment (4):** Oral exam | Week 16 |

### Weighting of Assessment

| Assessment method | Marks | Percentage |
|---|---|---|
| **Written exam** | 60 | 60% |
| **Practical exam and activities** | 25 | 25% |
| **Oral exam** | 15 | 15% |
| **TOTAL** | 100 | 100% |

## G- Facilities required for teaching and learning:

Black ( white ) boards, overhead projectors, data show.

## H- List of References:

**1- Course Notes:** Student book of industrial pharmacy-2 approved by pharmaceutics department (2012)

## 2- Essential Books:

i- Bentley's text book of Pharmaceutics by Rawlins, E. A., 8th ed (1984).

ii- Ansels Pharmaceutical Dosage forms and drug delivery systems 8/ed, Allen , L .V (2005).

## 3- Recommended Books

i- Pharmaceutics: The Science of Dosage Form Design by Aulton, M. E., (1993).

ii- The theory and Practice of Industrial Pharmacy by Lachman, L., Lieberman, H. A., Kanig, J. L., and Febiger, Philidelphia, USA. (1976).

iii- Good manufacturing practice for pharmaceuticals, Nally, Joseph.D, Informa Healthcare, (2007).

## 4- Periodicals and websites:

Journal of pharmaceutical sciences

www.Pubmed.com

www.Sciencedirect.com

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**Course Coordinators: Prof. Dr. Fakhr El-Din Ghazy**

**Head of Department: Prof. Dr. Mahmoud Abdel Ghany Mahdy**

**Date: 2012 / 9 / 3 تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ**

## Matrix I of industrial pharmacy 2 course

| Course Contents | | ILOs of industrial pharmacy 2 course | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Knowledge and understanding | | | | Professional and practical skills | | Intellectual skills | | | Transferable and general skills | |
| Lectures | | a1 | a2 | a3 | a4 | b1 | b2 | c1 | c2 | c3 | d1 | d2 |
| 1 | Types and classes of tablets | x | | x | | | | | | | | |
| 2 | Tablets used to prepare solutions | | x | | | | | | | | | |
| 3 | Manufacturing of compressed tablet | | x | | x | | | | | | | |
| 4 | Methods of tablet manufacturing | | | x | | | | | | | | |
| 5 | Evaluation of tablets | x | x | | | | | x | | | x | |
| 6 | Types of tablet coating | x | x | x | | | | | | | | |
| 7 | Film coating solution | x | x | | x | | | | | | | |
| 8 | Film coating process | x | x | | | | | | | | | |
| 9 | Requirements for asatisfactory package | | | | x | | | | | | | |
| 10 | Pakaging materials | | | | x | | | | | | | |
| 11 | Containers and closures | | | | x | | | | | | | |
| 12 | Requirements of GMP and quality management | | | | x | | | | x | | | |
| 13 | Guides to GMP for medicinal products | | | | x | | | | | x | | |
| 14 | Quality control | | | | x | | | | | | | x |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | Particle size reduction and analysis | x | | x | | | | | | | | |
| 16 | Particle size reduction and analysis-continue | x | x | | | | | | | | | |
| 17 | Particle size reduction and analysis-continue | | x | | | | | | | | | |
| **Practical session** | | | | | | | | | | | | |
| 1 | Revision on types and classes of tablets and tablets used to prepare solutions | x | x | | | x | | | | | | |
| 2 | Revision on manufacturing of compressed tablet | | | | | x | | | | | | |
| 3 | Revision on methods of tablet manufacturing | | | | | | x | | | | | |
| 4 | Revision on evaluation of tablets | | | | | | | x | | | x | |
| 5 | Revision on types of tablet coating ,film coating solution and film coating process | | | x | x | | | | | | | |
| 6 | Practical exam-1 | | | | | | | | | | | |
| 7 | Revision on containers and closures | | | | | | x | | x | | | x |
| 8 | Revision on requirements of GMP and quality management | | | | | | x | | x | | | |
| 9 | Revision on guides to GMP for medicinal products | | | | | | | x | | x | | |
| 10 | Revision on quality control | | | | | | x | x | | | | x |
| 11 | Revision on particle size reduction and analysis | | | | | | x | x | | | | |
| 12 | Revision on particle size reduction and analysis | | | | | | x | x | | | | |
| 13 | Activity | | | | | | x | | | | | |

## Matrix II of industrial pharmacy course

| NARS | | Program ILOS | Course ILOS | Course content | Sources | Teaching and learning methods | | | Method of assessment | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Lecture | Practical session | Self learning | written exam | Practical exam | Oral exam |
| 2.1 | Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice. | A2 | $a_1$ | Types and classes of tablets<br>Evaluation of tablets<br>Types of tablet coating<br>Film coating solution<br>Film coating process<br>Particle size reduction and analysis<br>Particle size reduction and analysis- continue | Student book<br>Essential books | x | | | x | | x |
| | | | $a_3$ | Methods of tablet manufacturing Types of tablet coating<br>Particle size reduction and analysis | Student book<br>Essential books | x | | | x | | x |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.7 | Principles of various instruments and techniques including sampling, manufacturing, packaging, labeling, storing and distribution processes in pharmaceutical industry | A18 | $a_2$ | Tablets used to prepare solutions Manufacturing of compressed tablet<br>Evaluation of tablets<br>Types of tablet coating<br>Film coating solution<br>Film coating process<br>Particle size reduction and analysis- continue | Student book Essential books | x | | | x | | x |
| | | | $a_4$ | Manufacturing of compressed tablet<br>Film coating solution<br>Requirements for asatisfactory package<br>Pakaging materials<br>Containers and closures<br>Requirements of GMP and quality management<br>Guides to GMP for medicinal products<br>Quality control | Student book Essential books | x | x | | x | | x |
| 3.2 | Handle and dispose chemicals and pharmaceutical preparations safely | B4 | b1 | Manufacturing of compressed tablet | Student book Essential books and practical notes | x | | | x | | x |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Revision on manufacturing of compressed tablet | Student book Essential books and practical notes | | x | | | x | |
| | | | b2 | Methods of tablet manufacturing | Student book Essential books Internet | x | | | x | | x |
| | | | | Revision on methods of tablet manufacturing Methods of tablet manufacturingFilm coating solution Activity | Student book Essential books | | x | | | x | |
| 4.3 | Apply qualitative and quantitative analytical and biological methods for QC and assay of raw materials as well as pharmaceutical preparations. | C4 | c1 | Evaluation of tablets | Student book Essential books | x | | | x | | x |
| | | | | Revision on evaluation of tablets | Student book Essential books | | x | | | x | |
| | | | c2 | Requirements of GMP and quality management | Student book Essential books | x | | | x | | x |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Revision on requirements of GMP and quality management | Student book Essential books | | x | | | x | |
| | | | c3 | Guides to GMP for medicinal products | Student book Essential books Internet | x | | | x | | x |
| | | | | Revision on guides to GMP for medicinal products | Student book Essential books | | x | | | x | |
| 5.3 | Work effectively in a team. | D4 | d1 | Evaluation of tablets | Student book Essential books | x | | | x | | x |
| | | | | Revision on evaluation of tablets | Student book Essential books | | x | | | x | |
| | | | d2 | Quality control | Student book Essential books | x | | | x | | x |
| | | | | Revision on quality control | Student book Essential books Internet | | x | | | x | |

## Matrix III of industrial pharmacy-2 Course

| Week No. | Course contents | Sources | Teaching and learning methods | | | Assessment methods | | |
|---|---|---|---|---|---|---|---|---|
| | | | Lectures | Practical session | Self learning | Written exam | Practical exam | Oral exam |
| 1 | Types and classes of tablets | Student book Essential books | x | | | x | | x |
| | Tablets used to prepare solutions | Student book Essential books | x | | | x | | x |
| | Revision on types and classes of tablets and tablets used to prepare solutions | Student book Essential books and practical notes | | x | | | x | |
| 2 | Manufacturing of compressed tablet | Student book Essential books | x | | | x | | x |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Revision on manufacturing of compressed tablet | Student book Essential books and practical notes | | x | | | x | |
| 3 | Methods of tablet manufacturing | Student book Essential books | x | | | x | | x |
| | Revision on methods of tablet manufacturing | Student book Essential books and practical notes | | x | | | x | |
| 4 | Evaluation of tablets | Student book Essential books | x | | | x | | x |
| | Revision on evaluation of tablets | Student book Essential books and practical notes | | x | | | x | |
| 5 | Types of tablet coating | Student book Essential books | x | | | x | | x |
| | Film coating solution | Student book Essential books | x | | | x | | x |
| | Film coating process | Student book Essential books | x | | | x | | x |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Revision on types of tablet coating ,film coating solution and film coating process | Student book Essential books and practical notes | | x | | | x | |
| 6 | Requirements for asatisfactory package | Student book Essential books | x | | | x | | x |
| | Pakaging materials | Student book Essential books | x | | | x | | x |
| | Practical exam-1 | | | | | | | |
| 7 | Containers and closures | Student book Essential books | x | | | x | | x |
| | Revision on requirements for asatisfactory package and pakaging materials | Student book Essential books and practical notes | | x | | | x | |
| 8 | Requirements of GMP and quality management | Student book Essential books | x | | | x | | x |
| | Revision on containers and closures | Student book Essential books and practical notes | | x | | | x | |
| | Activity | Internet | | x | | | x | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 9 | Guides to GMP for medicinal products | Student book Essential books | x | | | x | | x |
| | Revision on requirements of GMP and quality management | Student book Essential books and practical notes | | x | | | x | |
| 10 | Quality control | Student book Essential books | x | | | x | | x |
| | Revision on guides to GMP for medicinal products | Student book Essential books and practical notes | | x | | | x | |
| 11 | Particle size reduction and analysis | Student book Essential books | x | | | x | | x |
| | Revision on quality control<br>Revision on particle size reduction and analysis | Student book Essential books and practical notes | | x | | | x | |
| 12 | Particle size reduction and analysis-continue | Student book Essential books | x | | | x | | x |
| | Practical exam-2 | | | x | | | x | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 13 | Particle size reduction and analysis-continue | Student book Essential books | x | | x | x | | x |
| | | | | | | | | |
| 14 | Revision | Student book and recommended books | x | | x | x | | x |
| 15 | Open discussion | Student book and recommended books | x | | x | x | | x |

**Course Coordinators:** **Prof. Dr. Fakhr El-Din Ghazy**

**Head of Department:** **Prof. Dr. Mahmoud Abdel Ghany Mahdy**

**Date:** **2012 / 9 / 3 تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ**

# COURSE SPECIFICATIONS

# Medicinal Chemistry (4)

# Fifth Year-Second Term
# 2012-2013

# Course Specification of Medicinal chemistry (4)

**University: Zagazig Faculty: Pharmacy**

## A- Course specifications:

Program(s) on which the course is given: B. Pharm. Sci.

Major or Minor element of programs: Major

Department offering the program: -------

Department offering the course: Medicinal chemistry department

Academic year/ Level: Fifth year /Second term

Date of specification approval: 3 September 2012

## B- Basic information:

Title: Medicinal chemistry (4) Code: 351

Credit Hours: ---

Lectures : 2 hrs/week

Practical: 2 hrs/week

Tutorials: ---

Total: 4 hrs/week

## C- Professional information:

### 1-Overall Aims of the Course:

On completion of the course, students will be able to outline synthesis, estimation, mechanism of action, structure-activity relationships, adverse reactions & specific medicinal uses of steroids, antihistaminic & anti -ulcer drugs& vitamins as well as drug design and metabolism.

## 2-Intended Learning Outcomes of Medicinal Chemistry (4) (ILOs):

| | |
|---|---|
| **A- Knowledge and Understanding** | |
| a1 | Illustrate proper analytical methods for assay of hormones, antihistaminic drugs, anti-ulcers & vitamins. |
| a2 | Define the basis of drug design, drug development & drug latentiation. |
| a3 | Describe suitable methods for synthesis of hormones, antihistaminic drugs, anti-ulcers & vitamins. |
| a4 | Explain drug metabolism & pathway of the drug in the body. |
| a5 | Demonstrate physicochemical parameters of drugs. |
| **B- Professional and Practical skills** | |
| b1 | Apply colorimeter methods for measuring light absorption in UV-VIS region. |
| b2 | Analyze the results obtained from colorimetric assay of drugs. |
| **C- Intellectual skills** | |
| c1 | Apply GLP guidelines in handling chemicals & laboratory equipments (colorimeter). |
| c2 | Evaluate quantitative and qualitative methodology and assay of pharmaceutical preparations. |
| **D- General and Transferable skills** | |
| d1 | Work effectively as apart of team with the students in the lab during experiments. |
| d2 | Adopt safety guidelines during lab work. |
| d3 | Implement writing lab reports and presenting the results. |

## D- Contents:

| Week No. | Lecture (2hrs/week) | Practical session (2hrs/week) |
|---|---|---|
| 1 | -Hormones (estrogens, progesterones) | -Measurement of light absorption in UV-Visible region(Beer-Lambert`s law) |
| 2 | -Androgens, anabolic agents | -Determination of lamda max of a colored solution and study of the factors affecting the optimization of the method |
| 3 | -Corticosteroids | -Colorimetric assay of cortisone |
| 4 | -Drug Metabolism<br>-Functionalization reaction (phase I) | -Colorimetric assay of sulfacetamide |
| 5 | -Conjugation reactions (phase II) | -Colorimetric assay of procaine<br>**-Activity1(case study/report)** |
| 6 | -Factors affecting drug metabolism)<br>-Introduction in Drug design | -Colorimetric assay of captopril |
| 7 | -Development of drugs<br>-Drug Latentiation | **-Practical exam (1)** |
| 8 | -Physicochemical factors & Drug receptor-interaction | -Colorimetric assay of saliclylic acid |
| 9 | -Antihistaminics (H1-antagonists) | -Assay of prescription No.1 Diphenhydramine hydrochloride,zinc sulphate |
| 10 | -Antiulcer Drugs (H2-antagonists,proton pump inhibitors & prostaglandins) | -Colorimetric assay of Patoprazole<br>**-Activity2(case study/report)** |
| 11 | -Vitamins<br>Lipid-soluble vitamins (A,D,E&K) | -Assay of prescription No.2 Vitamin C & calcium gluconate<br>-Colorimetric assay of Iron containing capsules (Fefol)® |
| 12 | -Water-soluble vitamins (vitamin $B_1$,$B_2$,$B_3$) | **-Practical exam (2)** |
| 13 | -Folic acid , Vitamin $B_{12}$ &Vitamin C | |
| 14 | -Revision | ---------- |
| 15 | -Open discussion | ---------- |

## E- Teaching and Learning Methods:

- Lectures
- Practical sessions
- Self learning (activity, internet search)

## F- Student Assessment Methods:

1- Written exam to assess a1, a2, a3, a4, a5, c2

2- Activity to assess d1, d3

3- Practical exam to assess b1, b2, c1, c2, d1, d2, d3

4- Oral exam to assess a1, a1, a3, a4, a5, c2

### Assessment schedule:

| | |
|---|---|
| **Assessment (1):** Written exam | Week 16 |
| **Assessment (2):** Activity | Week 5, 10 |
| **Assessment (3):** Practical exams | Week 7,12 |
| **Assessment (4):** Oral exam | Week 16 |

### Weighting of Assessment:

| Assessment method | Marks | Percentage |
|---|---|---|
| **Written exam** | 60 | 60% |
| **Practical exam and activities** | 25 | 25% |
| **Oral exam** | 15 | 15% |
| **TOTAL** | 100 | 100% |

## G- Facilities Required for Teaching and Learning:

- Black (white) board, overhead projectors, Data show, laboratory equipments and chemicals.

## H- List of References:

**1- Course Notes:** Student book of Medicinal chemistry (4) approved by medicinal chemistry department 2012.

- Practical notes of Medicinal chemistry (4) approved by medicinal chemistry department 2012.

## 2- Essential Books:

i- Wilson & Griswold's Textbook of Organic: Medicinal and Pharmaceutical Chemistry; Wilson, Charles Owens; Beale, John Marlowe; Block, John H.; Block, John H.; Griswold, Ole; Wiley-Interscience (2009).

ii- Foye's Principles of Medicinal Chemistry; Williams, David A., William O. Foye, and Thomas L. Lemke; Lippincott Williams and Wilkins (2009).

iii- B.p. &U.S Pharmacopia (1988-2007)

## 3- Recommended books

i- An Introduction to Medicinal Chemistry; Patrick, Graham L, Oxford (2009)

## 4- Periodicals, Web Sites, etc

http://www.ncbi.nlm.nih.gov/sites/entrez

http://journals.tubitak.gov.tr/chem/index.php

http://www.pharmacopoeia.co.uk/

www.Pubmed.Com

www.sciencedirect.com

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**Course Coordinator: Prof. Dr.Mohamed El-husseiny El-sadek**

**Head of department: Prof. Dr. Mansour Abu Kull**

**Date: 2012/9/ 3 تم مناقشة واعتماد توصيف المقرر من مجلس القسم المقرر بتاريخ**

## Matrix I of Medicinal chemistry4 Course

| Course Contents | | ILOs of Medicinal chemistry 4 course | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Knowledge and understanding | | | | | Professional and practical skills | | Intellectual skills | | General and transferable skills | | |
| Lectures | | a1 | a2 | a3 | a4 | a5 | b1 | b2 | c1 | c2 | d1 | d2 | d3 |
| 1 | Hormones(estrogens&progestrons) | x | | x | | | | | | x | | | |
| 2 | Androgens&Anabolic agents | x | | x | | | | | | x | | | |
| 3 | corticosteroids | x | | x | | | | | | x | | | |
| 4 | Drug metabolism,phaseI(functionalization reaction) | | | | x | | | | | | | | |
| 5 | Conjugation reaction(phaseII). Factors affecting drug metabolism. | | | | x | | | | | | | | |
| 6 | Introduction in drug design, development of drugs, drug latentiation | | x | | | | | | | | | | |
| 7 | Development of drugs Drug Latentiation | | | | | | | | | | | | |
| 8 | Physicochemical factors&Drug-Receptor interaction | | | | | x | | | | | | | |
| 9 | Antihistaminics(H1-antagonist) | x | | x | | | | | | x | | | |
| 10 | Antiulcer drugs(H2-antagonist,proton pump inhibitor,prostaglandins) | x | | x | | | | | | x | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | Vitamins;lipid-soluble vitamins(A,D,E&K) | x | | x | | | | | | x | | | |
| 12 | water-soluble vitamins(vitamin B1,B2&B3) | x | | x | | | | | | x | | | |
| 13 | Folic acid,Vitamin B12&Vitamin C | x | | x | | | | | | x | | | |
| | **Practical sessions** | | | | | | | | | | | | |
| 1 | Measurment of light absorption in UV-Visible region (Beer-Lambert`s law) | | | | | | x | | x | | x | x | |
| 2 | Determination of lamda max of a coloured solution &study of factors affecting the optimization of the method. | | | | | | x | | x | | x | x | |
| 3 | Colorimetric assay of cortisone,sulfacetamide,procaine,captopril,saliclylic acid,Patoprazole,Iron containing capsules (Fefol)® | | | | | | | x | | x | x | x | |
| 4 | Assay of prescription No.1(Diphenhydramine hydrochloride,zinc sulphate) Assay of prescription No.2(Vitamin C & calcium gluconate) | | | | | | | x | | x | x | x | |
| 5 | Activities | | | | | | | | | | x | | x |

## Matrix II of Medicinal chemistry 4 course

| National Academic Reference Standards (NARS) | | Program ILOs | Course ILOs | Course contents | Sources | Teaching and learning methods | | | Methods of assessment | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Lecture | Practical session | Self learning | Written exam | Practical exam | Oral exam |
| 2.3 | Principles of different analytic techniques using GLP guidelines and validation procedures. | A11 | a1 | Hormones | student book | x | | | x | | X |
| | | | | Antihistaminics , Antiulcer Drugs | student book | x | | | x | | X |
| | | | | Vitamins | student book | x | | | x | | X |
| 2.5 | Principles of drug design, development and synthesis | A14 | a2 | Introduction in Drug design<br>Development of drugs<br>Drug Latentiation | student book | x | | | x | | X |
| | | | | | | | | | x | | X |
| | | A15 | a3 | Hormones | student book | x | | | x | | X |
| | | | | Antihistaminics , Antiulcer Drugs | student book | x | | | x | | X |
| | | | | Vitamins | student book | x | | | x | | X |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **2.8** | Principles of pharmacokinetics and biopharmaceutics with applications in therapeutic drug monitoring, dose modification and bioequivalence studies. | A19 | a4 | Drug Metabolism, Functionalization reaction, | student book,essential books | x | | | x | | X |
| | | | | Conjugation reactions,Factors affecting drug metabolism | student book | x | | | x | | X |
| **2.17** | Methods of biostatistical analysis and pharmaceutical calculations | A36 | a5 | Physicochemical factors & Drug receptor-interaction | student book | x | | | x | | X |
| **3.8** | Apply techniques used in operating pharmaceutical equipment and instruments | B13 | b1 | Measurment of light absorption in UV-Visible region(Beer-Lambert`s law) | Practical notebook | | x | | | x | |
| | | | | Determination of lamda max of a coloured solution &study of factors affecting the optimization of the method. | Practical notes | | x | | | x | |
| **3.11** | Conduct research studies and analyze the | B17 | b2 | Colorimetric assay of cortisone | Practical notes | | x | | | x | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | results | | | Colorimetric assay of sulfacetamide | Practical notes | | x | | | x | |
| | | | | Colorimetric assay of procaine | Practical notes | | x | | | x | |
| | | | | Colorimetric assay of captopril | Practical notes | | x | | | x | |
| | | | | Colorimetric assay of saliclylic acid | Practical notes | | x | | | x | |
| | | | | Assay of prescription No.1 Diphenhydramine hydrochloride,zinc sulphate | Practical notes | | x | | | x | |
| | | | | Colorimetric assay of Patoprazole | Practical notes | | x | | | x | |
| | | | | Assay of prescription No.2 Vitamin C & calcium gluconate | Practical notes | | x | | | x | |
| | | | | Assay of iron containing capsules | Practical notes | | x | | | x | |
| **4.2** | Comprehend and apply GLP,GPMP, GSP and GCP guidelines in pharmacy practice | C3 | c1 | Measurment of light absorption in UV-Visible region(Beer-Lambert`s law) | Practical notes | | x | | | x | |
| | | | | Determination of lamda max of a colored solution and study of the factors affecting the optimization of the method | Practical notes | | x | | | x | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.3 | Apply qualitative and quantitative analytical and biological methods for QC and assay of raw materials as well as pharmaceutical preparations | C4 | c2 | Colorimetric assay of cortisone | Practical notes | | x | | | x | |
| | | | | Colorimetric assay of sulfacetamide | Practical notes | | x | | | x | |
| | | | | Colorimetric assay of procaine | Practical notes | | x | | | x | |
| | | | | Colorimetric assay of captopril | Practical notes | | x | | | x | |
| | | | | Colorimetric assay of saliclylic acid | Practical notes | | x | | | x | |
| | | | | Assay of prescription No.1 Diphenhydramine hydrochloride,zinc sulphate | Practical notes | | x | | | x | |
| | | | | Colorimetric assay of Patoprazole | Practical notes | | x | | | x | |
| | | | | Assay of prescription No.2 • Vitamin C & calcium gluconate | Practical notes | | x | | | x | |
| | | | | Colorimetric assay of Iron containing capsules (Fefol)® | Practical notes | | x | | | x | |
| | | | | Hormones, Antihistaminics, Antiulcer Drugs & Vitamins | studentbook | x | | | x | | X |
| 5.3 | Work effectively in a team | D4 | d1 | Measurment of light absorption in UV-Visible region(Beer-Lambert`s law) | Practical notes | | x | | | x | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Determination of lamda max of a coloured solution &study of factors affecting the optimization of the method. | Practical notes | | x | | | x | |
| | | | | Colorimetric assay of cortisone,sulfacetamide,procaine,captopril,saliclylic acid,Patoprazole,Iron containing capsules (Fefol)® | Practical notes | | x | | | x | |
| | | | | Assay of prescription No.1(Diphenhydramine hydrochloride,zinc sulphate) Assay of prescription No.2(Vitamin C & calcium gluconate) | Practical notes | | x | | | x | |
| | | | | Activity | Practical notes/Internet | | x | x | | x | |
| **5.6** | Adopt ethical, legal and saftey guidelines | D8 | d2 | Measurment of light absorption in UV-Visible region(Beer-Lambert`s law) | Practical notes | | x | | | x | |
| | | | | Determination of lamda max of a coloured solution &study of factors affecting the optimization of the method. | | | | | | | |
| | | | | Colorimetric assay of cortisone,sulfacetamide,procaine,captopril,saliclylic acid,Patoprazole,Iron containing capsules (Fefol)® | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Assay of prescription No.1(Diphenhydramine hydrochloride,zinc sulphate) Assay of prescription No.2(Vitamin C & calcium gluconate) | | | | | | | |
| **5.9** | Implement writing and presentation skills | D11 | d3 | Activity | Practical notes/ internet/essential books | | x | x | | x | |

# Matrix III of Medicinal Chemistry4 Course

| Week No. | Course content | Source | Teaching and learning methods | | | Assessment methods | | |
|---|---|---|---|---|---|---|---|---|
| | | | Lectures | Practical session | Self learning | Written exam | Practical exam | Oral exam |
| 1 | Hormones ( Estrogens and progesterones) | student book | x | | | x | | x |
| | Measurment of light absorption in UV-Visible region(Beer-Lambert`s law) | Practical notes | | x | | | x | |
| 2 | Androgens and Anabolic agents | student book | x | | | x | | x |
| | Determination of lamda max of a colored solution and study of the factors affecting the optimization of the method | Practical notes | | x | | | x | |
| 3 | Corticosteroids | student book | x | | | x | | x |
| | Colorimetric assay of cortisone | Practical notes | | x | | | x | |
| 4 | Drug Metabolism Functionalization reaction (phase I) | student book,essential books | x | | | x | | x |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Colorimetric assay of sulfacetamide | Practical notes | | x | | | x | |
| 5 | Conjugation reactions (phase II) | student book,essential books | x | | | x | | x |
| | Colorimetric assay of procaine | Practical notes | | | | | x | |
| | Activity1 (case study) | Practical notebook/Internet | | x | x | | x | |
| 6 | Factors affecting drug metabolism Introduction in Drug design | student book | x | | | x | | x |
| | Colorimetric assay of captopril | Practical notes | | x | | | x | |
| 7 | Development of drugs Drug Latentiation | student book | x | | | x | | x |
| | Practical Exam 1 | | | x | | | x | |
| 8 | Physicochemical factors & Drug receptor-interaction | student book | x | | | x | | x |
| | Colorimetric assay of saliclylic acid | Practical notes | | x | | | x | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 9 | Antihistaminics(H1-antagonists) | student book | x | | | x | | x |
| | Assay of prescription No.1<br>Diphenhydramine hydrochloride,zinc sulphate | Practical notes | | x | | | x | |
| 10 | Antiulcer Drugs (H2-antagonists,proton pump inhibitors & prostaglandins) | student book | x | | | x | | x |
| | Colorimetric assay of Patoprazole<br>Activity2 (case study) | Practical notebook/Internet | | x | x | | x | |
| 11 | Vitamins<br>Lipid-soluble vitamins(A,D,E&K) | student book | x | | | x | | x |
| | Assay of prescription No.2<br>Vitamin C & calcium gluconate<br>Colorimetric assay of Iron containing capsules (Fefol)® | Practical notes | | x | | | x | |
| 12 | Water-soluble vitamins (vitamin B1,B2,B3) | student book | x | | | x | | x |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Practical Exam 2 | | | x | | | x | |
| 13 | Folic acid , Vitamin B12 ,&Vitamin C | student book | x | | | x | | x |
| | Practical Exam 2 | | | x | | | x | |
| 14 | Revision | student book and Internet | x | | x | x | | x |
| 15 | Open discussion | student book and Internet | x | | x | x | | x |

**Course Coordinator: Prof. Dr.Mohamed El-husseiny El-sadek**

**Head of department: Prof. Dr. Mansour Abu Kull**

**Date: 2012/9/ 3 تم مناقشة واعتماد توصيف المقرر من مجلس القسم المقرر بتاريخ**

# COURSE SPECIFICATIONS

# Quality Control

# Fifth Year-Second Term
# 2012-2013

# Course Specification of Quality Control

**University: Zagazig Faculty: Pharmacy**

## A- Course specifications:

Program(s) on which the course is given: B. Pharm. Sci.

Major or Minor element of programs: Major

Department offering the program: -------

Department offering the course: Medicinal chemistry department

Academic year/ Level: Fifth year /Second term

Date of specification approval: 3 September 2012

## B- Basic information:

Title: Quality Control Code: 352

Credit Hours: ---

Lectures : 2 hrs/week

Practical: 2 hrs/week

Tutorials: ---

Total: 4 hrs/week

## C- Professional information:

### 1-Overall Aims of the Course:

On completion of the course, students will be able to explain various analytical techniques for drug analysis and methods of pharmaceutical calculation.

## 2-Intended Learning Outcomes of Quality Control (lLOs):

| | |
|---|---|
| **A- Knowledge and Understanding** | |
| a1 | Demonstrate properties of radiopharmaceuticals & their applications. |
| a2 | Illustrate various analytical techniques for drug analysis. |
| a3 | Outline principles of identification of tables, semisolids, eye drops, injection, suppositories and aerosols inhalation. |
| a4 | Describe appropriate methods of pharmaceutical calculation for pharmaceutical samples. |
| **B- Professional and Practical skills** | |
| b1 | Handle basic laboratory equipments & chemicals effectively and safely. |
| b2 | Identify active ingredients quantitatively. |
| **C- Intellectual skills** | |
| c1 | Apply GMP guidelines in pharmacy practice. |
| c2 | Choose quantitative and qualitative methodology and assay of raw materials. |
| c3 | Select quantitative and qualitative methodology and assay of pharmaceutical preparations including: (tables, semisolids, eye drops, injection, suppositories and aerosols inhalation). |
| c4 | Apply analytical technology to determine the characteristics of biopharmaceutical products. |
| **D- General and Transferable skills** | |
| d1 | Develop communications skills with public, patients and other health care professionals. |
| d2 | Improve professional abilities by evaluation information from different sources. |
| d3 | Work effectively as a member of a team. |
| d4 | Write reports and present it. |

## D- Contents:

| Week No. | Lecture (2hrs/week) | Practical session (2hrs/week) |
|---|---|---|
| 1 | -Drug registration and assessment | -Assay of Paracetamol tablets |
| 2 | -Analytical Problem: sampling and experimental errors | -Assay of Isoniazid tablets |
| 3 | -Analytical Problem: choice of methods of an analysis and validation | -Assay of glycerol suppositories |
| 4 | -Drug stability and degradation product (1) | -Assay of chloramphenicol Capsules |
| 5 | -Drug stability and degradation product (2) | -Assay of Chloramphenicol eye drops<br>**-Activity(Report)** |
| 6 | -Function group analysis<br>-Classical analysis | -Revision |
| 7 | - Function group analysis<br>-Instrumental analysis | **-Practical exam (1)** |
| 8 | -Automation in pharmaceutical analysis | -Assay of lidocaine injection |
| 9 | -Automation in pharmaceutical analysis | -Assay of Furosemide |
| 10 | - Determination of active ingredients in tablets,semisolid and eye drops | -Assay of Sodium chloride intravenous infusion |
| 11 | -Determination of active ingredients in injection and suppositories | -Assay of salicylic acid ointment<br>-Assay of phenylephrine eye drops<br>**-Activity (Report)** |
| 12 | -Determination of active ingredients in aerosols inhalation | **-Practical exam (2)** |
| 13 | -Quality assurance of pharmaceuticals G.M.P, ISO and BSI | |
| 14 | -Revision | |
| 15 | -Open discussion | |

## E- Teaching and Learning Methods:

- Lectures
- E-learning electronic course
- Practical sessions
- Self learning (activity, internet search)

## F- Student Assessment Methods:

1- Written exam to assess a1,a2,a3,a4,c2,c3

2- Activity to assess c4, d1, d2, d3, d4

3- Practical exam to assess b1,b2,c1,c2,c3,d1,d2,d3,d4

4- Oral exam to assess a1,a2,a3,a4,c2,c3

**Assessment schedule:**

| | |
|---|---|
| **Assessment (1):** Written exam | Week 16 |
| **Assessment (2):** Activity | Week 5,11 |
| **Assessment (3):** Practical exams | Week 7,12 |
| **Assessment (4):** Oral exam | Week 16 |

**Weighting of Assessment:**

| Assessment method | Marks | Percentage |
|---|---|---|
| **Written exam** | 60 | 60% |
| **Practical exam and activities** | 25 | 25% |
| **Oral exam** | 15 | 15% |
| **TOTAL** | 100 | 100% |

## G- Facilities Required for Teaching and Learning:

- Black (white) board, overhead projectors, Data show, laboratory equipments and chemicals.

## H- List of References:

**1- Course Notes:** Student book of Quality Control approved by medicinal chemistry department 2012.

- Practical notes of Quality Control approved by medicinal chemistry department 2012.

**2- Essential Books:**

i- Wilson & Griswold's Textbook of Organic: Medicinal and Pharmaceutical Chemistry; Wilson, Charles Owens; Beale, John Marlowe; Block, John H.; Block, John H.; Griswold, Ole; Wiley-Interscience (2009).

ii- Foye's Principles of Medicinal Chemistry; Williams, David A., William O. Foye, and Thomas L. Lemke; Lippincott Williams and Wilkins (2009).

iii- B.p. &U.S Pharmacopia (1988-2007)

iv- Chemical stability of pharmaceuticals; Connors K.A., Amidon G.L., Stella V.J.

v- Pharmaceutical process validation; Robert A. Nash, Alfred H. Wachter (2006)

vi- Photostability of drugs and drug formulations; Hanne Hjorth Tønnesen ( 2004)

**3- Recommended books**

i- An Introduction to Medicinal Chemistry; Patrick, Graham L, Oxford (2009)

**3- Periodicals, Web Sites, etc**

http://www.ncbi.nlm.nih.gov/sites/entrez

http://journals.tubitak.gov.tr/chem/index.php

http://www.pharmacopoeia.co.uk/

www.Pubmed.Com

www.sciencedirect.com

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**Course Coordinator: Prof. Dr. Mohamed Baraka**

**Head of department: Prof. Dr. Mansour Abu Kull**

**Date: 2012/9/ 3 تم مناقشة واعتماد توصيف المقرر من مجلس القسم المقرر بتاريخ**

## Matrix I of Quality Control course

| Course Contents | | ILOs of Quality Control course | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | knowledge and understanding | | | | professional and practical skills | | intellectual skills | | | | General and transferable skills | | | |
| | Lectures | a1 | a2 | a3 | a4 | b1 | b2 | c1 | c2 | c3 | c4 | d1 | d2 | d3 | d4 |
| 1 | Drug registration and assessment | | | | | | | | | | | | x | | |
| 2 | Analytical Problem: sampling and experimental errors | | | | x | | | | | | | | | | |
| 3 | Analytical Problem: Choice of methods of an analysis and validation | | | | x | | | | | | | | | | |
| 4 | Drug stability and degradation product | x | | | | | | | x | | | | | | |
| 5 | Function group analysis (Classical analysis) | | x | | | | | | | | | | | | |
| 6 | Function group analysis(Instrumental analysis ) | | x | | | | | | | | | | | | |
| 7 | Automation in pharmaceutical analysis | | x | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | Determination of active ingredients in Tablets semisolid and eye drops, injection, suppositories and aerosols inhalation | | | x | | | | | | x | | | | | |
| 9 | Quality assurance of pharmaceuticals G.M.P ,ISO and BSI | | | | | | | x | | | | | | | |
| **Practical sessions** | | | | | | | | | | | | | | | |
| 1 | Assay of :<br>Paracetamol tablets,Isoniazid tablets,Glycerol suppositories,Chloramphenicol capsules, Chloramphenicol eye drops, Lidocaine injection,Furosemide,Sodium chloride intravenous infusion,Salicylic acid ointment&Phenylephrine eye drops. | | | | | x | x | | | x | | | | | |
| 2 | Activity (reports) | | | | | | | | | | x | x | x | x | x |

## Matrix II of Quality Control course

| National Academic Reference Standards (NARS) | | Program ILOs | Course ILOs | Course contents | Sources | Teaching and learning methods | | | Method of assessment | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | lecture | practical session | self learning | written exam | practical exam | oral exam |
| 2.2 | Physico-chemical properties of various substances used in preparation of medicines including inactive and active ingredients as well as biotechnology and radio-labeled products. | A9 | a1 | Drug stability and degradation product | student book | x | | | x | | x |
| 2.3 | Principles of different analytic techniques using GLP guidelines and validation procedures. | A11 | a2 | Function group analysis Classical analysis | student book | x | | | x | | x |
| | | | | Function group analysis Instrumental analysis | student book | x | | | x | | x |
| | | | | Automation in pharmaceutical analyesis | student book | x | | | x | | x |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **2.4** | Principles of isolation, synthesis, purification, identification, and standardization methods of pharmaceutical compounds. | A12 | a3 | Determination of active ingredients in Tablets semisolid and eye drops | student book, essential books | x | | | x | | x |
| | | | | Determination of active ingredients in injection and suppositories | student book, essential books | x | | | x | | x |
| | | | | Determination of active ingredients in aerosols inhalation | student book, essential books | x | | | x | | x |
| **2.17** | Methods of biostatistical analysis and pharmaceutical calculations | A36 | a4 | Analytical Problem: sampling and experimental errors | student book | x | | | x | | x |
| | | | | Analytical Problem: Choice of methods of an analysis and validation | student book | x | | | x | | x |
| **3.2** | Handle and dispose chemicals and pharmaceutical preparations safely | B2 | b1 | .Assay of : Paracetamol tablets,Isoniazid tablets,Glycerol suppositories,Chloramphenicol capsules, Chloramphenicol eye drops, Lidocaine injection,Furosemide,Sodium chloride intravenous infusion,Salicylic acid ointment&Phenylephrine eye drops. | Practical notes | | x | | | x | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **3.4** | Extract, isolate, synthesize, purify, identify, and/or standardize active substances from different origins. | B5 | b2 | .Assay of : Paracetamol tablets,Isoniazid tablets,Glycerol suppositories,Chloramphenicol capsules, Chloramphenicol eye drops, Lidocaine injection,Furosemide,Sodium chloride intravenous infusion,Salicylic acid ointment&Phenylephrine eye drops. | Practical notes | | x | | | x | |
| **4.2** | Comprehend and apply GLP,GPMP, GSP and GCP guidelines in pharmacy practice | C3 | c1 | Quality assurance of pharmaceuticals G.M.P ,ISO and BSI | student book | x | | | x | | x |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **4.3** | Apply qualitative and quantitative analytical and biological methods for QC and assay of raw materials as well as pharmaceutical preparations | C4 | c2 | Drug stability and degradation product | student book | x | | | | | |
| | | C5 | c3 | Determination of active ingredients in Tablets semisolid and eye drops | student book | x | | | x | | |
| | | | | Determination of active ingredients in injection and suppositories | student book | x | | | x | | |
| | | | | Determination of active ingredients in aerosols inhalation | | x | | | x | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | .Assay of : Paracetamol tablets,Isoniazid tablets,Glycerol suppositories,Chloramphenicol capsules, Chloramphenicol eye drops, Lidocaine injection,Furosemide,Sodium chloride intravenous infusion,Salicylic acid ointment&Phenylephrine eye drops. | Practical notebook | | x | | | x | |
| 4.7 | Apply various principles to determine the characteristics of biopharmaceutical products. | C10 | c4 | Activity | essential books/Internet | | x | x | | x | |
| 5.1 | Communicate clearly by verbal and written means | D1 | d1 | .Activity (reports) | Internet | | x | x | | x | |
| 5.2 | Retrieve and evaluate information from different sources to improve professional competencies | D3 | d2 | Drug registration and assessment | student book | x | | | x | | x |
| | | | | Activities(reports) | essential books/Internet | | x | x | | x | |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 5.3 | Work effectively in a team | D4 | d3 | Activities(reports) | essential books/Internet | | x | x | | x | |
| 5.9 | Implement writing and presentation skills | D11 | d4 | Activities(reports) | essential books/Internet | | x | x | | x | |

## Matrix III of Quality Control Course

| Week No. | Course contents | Sources | Teaching and learning methods | | | Assessment methods | | |
|---|---|---|---|---|---|---|---|---|
| | | | Lectures | Practical session | Self learning | Written exam | Practical exam | Oral exam |
| 1 | Drug registration and assessment | student book | x | | | x | | x |
| | Assay of Paracetamol tablets | Practical notes | | x | | | x | |
| 2 | Analytical Problem: sampling and experimental errors | student book | x | | | x | | x |
| | Assay of Isoniazid tablets | Practical notes | | x | | | x | |
| 3 | Analytical Problem: Choice of methods of an analysis and validation | student book | x | | | x | | x |

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|---|---|---|---|---|---|---|---|---|
| | Assay of Glycerol suppositories | practical notes | | x | | | x | |
| 4 | Drug stability and degradation product | student book | x | | | x | | x |
| | Assay of Chloramphenicol capsules | practical notes | | x | | | x | |
| 5 | Drug stability and degradation product | student book | x | | | x | | x |
| | Assay of Chloramphenicol eye drops | practical notes | | x | | | x | |
| | Activity(Report) | Internet | | x | x | | x | |
| 6 | Function group analysis Classical analysis | Notebook | x | | | x | | x |
| | Revision | practical notes | | x | | | x | |
| 7 | Function group analysis Instrumental analysis | student book | x | | | x | | x |
| | Practical exam 1 | | | x | | | x | |

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|---|---|---|---|---|---|---|---|---|
| | Automation in pharmaceutical analyesis | student book | x | | | x | | x |
| 8 | Assay of Lidocaine injection | practical notes | | x | | | x | |
| 9 | Automation in pharmaceutical analysis | student book | x | | | x | | x |
| | Assay of Furosemide | practical notes | | x | | | x | |
| 10 | Determination of active ingredients in Tablets semisolid and eye drops | student book ,essential books | x | | | x | | x |
| | Assay of Sodium chloride intravenous infusion | practical notebook | | x | | | x | |
| 11 | Determination of active ingredients in injection and suppositories | student book, essential books | x | | | x | | x |
| | Assay of Salicylic acid ointment Assay of Phenylephrine eye drops | practical notebook | | x | | | x | |
| | Activity (Report) | Internet, essential books | | x | x | | x | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 12 | Determination of active ingredients in aerosols inhalation | student book, essential books | x | | | x | | |
| | Practical exam 2 | | | x | | | x | |
| 13 | Quality assurance of pharmaceuticals G.M.P ,ISO and BSI | student book | x | | | x | | |
| | | | | | | | | |
| 14 | Revision | Student book and Internet | x | | x | x | | x |
| 15 | Open discussion | Student book and Internet | x | | x | x | | x |

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**Course Coordinator: Prof. Dr. Mohamed Baraka**

**Head of department: Prof. Dr. Mansour Abu Kull**

**Date: 2012/9/ 3 تم مناقشة واعتماد توصيف المقرر من مجلس القسم المقرر بتاريخ**

# COURSE SPECIFICATIONS

# Business Administration

# Fifth Year-Second Term
# 2012-2013

# توصيف مقرر المحاسبة وإدارة الأعمال الصيدلية

## جامعة الزقازيق كليـة الصـيدلة

### أ- مواصفات المقرر:

البرنامج أو البرامج التى يقدم من خلالها المقرر: بكالوريوس العلوم الصيدلية

المقرر يمثل عنصرا رئيسيا أو ثانويا بالنسبة للبرامج: ثانوياً

القسم العلمي المسئول عن البرنامج: ----------

القسم الذي يدرس المقرر: كلية التجارة–قسم إدارة الأعمال

مستوى العام الأكاديمي: الفرقة الخامسة/ التيرم الثاني

تاريخ اعتماد التوصيف: سبتمبر 2012

### (ب) البيانات الأساسية:

العنوان : محاسبة و إدارة أعمال صيدلية الكود : ABA

الساعات المعتمدة : ---

المحاضرات : ساعتان أسبوعيا

العملي: ---

الدروس العملية : ---

المجموع : 2 ساعة في الأسبوع

### (ج) البيانات المهنية:

#### 1) الأهداف العامة للمقرر:

عند إتمام المقرر سوف يكون الطالب قادر على الالمام بـالمفاهيم والاتجاهات المختلفة للإدارة.

## 2) النتائج التعليمية المستهدفة لمقرر المحاسبة و إدارة الأعمال الصيدلية:

| | |
|---|---|
| **أ – المعرفة والفهم** | |
| أ1 | يعرف نظريات الإدارة الحديثة وأسس تطبيقها في ظل العولمة. |
| أ2 | يلم بالمعارف والمهارات المتعلقة بالتخطيط، التنظيم ،اتخاذ القرارات ،القيادة ،الرقابة والاتصال. |
| أ3 | يوضح طرق إدارة المشروعات الصغيرة (الصيدلية) وتحديد الأهداف والموارد وتوزيع الوظائف. |
| أ4 | يعرف كيفية عمل دراسة جدوى اقتصادية لإنشاء صيدلية. |
| **ج- المهارات الذهنية** | |
| ج1 | يقيم بعض النماذج لشركات الأدوية الناجحة ومعرفة أسباب نجاحها والاستفادة منها. |
| ج2 | يطبق المباديء الاقتصادية في إدارة الصيدلية، وفي دراسة الجدوى الاقتصادية للمشروعات الصيدلية. |
| **د- المهارات العامة والمنقولة** | |
| د1 | يعمل بكفاءة كأحد أفراد الفريق. |
| د2 | يستخدم المصادر الالكترونية ونظم المعلومات في الإدارة. |
| د3 | يختار الشكل القانوني المناسب للمنظمة. |
| د4 | يكتسب مهارات التفكير الإبداعي واتخاذ القرارات الذكية وتبسيط إجراءات العمل. |
| د5 | ينمي مهارة إدارة الوقت والتخطيط الاستراتيجي. |
| د6 | يطور مهارات التفكير النقدي و اتخاذ القرارات و معالجة المشكلات التي تواجه مديري الصيدليات وشركات الأدوية. |

## د- المحتويات:

| الأسبوع | المحاضرة (2 ساعة/ الأسبوع) |
|---|---|
| 1 | مفاهيم الإدارة والأعمال. |
| 2 | المتغيرات العالمية التي تؤثر على الصيدلي بعض المفاهيم الحديثة لمواجهتها. |
| 3 | ثقافة المنظمة الملتزمة بالجودة. |
| 4 | أخلاقيات الأعمال والمسئولية الإجتماعية للمنظمات. |
| 5 | التنبؤ وبناء القدرة على الرؤيا المستقبلية. |
| 6 | التخطيط: طرق إعداد الخطط الاستراتيجية. |
| 7 | أسس اتخاذ القرارات الذكية للصيدلي المتميز. |
| 8 | إدارة الوقت كأداة لتحقيق التميز. |
| 9 | إدارة الازمات وطرق مواجهتها. |
| 10 | دراسة جدوى إنشاء المشروع الجديد. |
| 11 | طرق إدارة الصراع ومواجهتها. |
| 12 | طرق الإدارة ضمن فريق العمل. |
| 13 | مهارات الاتصال داخل المنظمة. |

| | |
|---|---|
| 14 | التنسيق وتنظيم الأعمال |
| 15 | الرقابة كأداة لتحقيق الخطط المحددة.<br>-مناقشة حرة |

## هـ- أساليب التعليم و التعلم:

- المحاضرات

## و-أساليب تقييم الطلبة:

**1- الامتحان التحريري يقيم: أ1و أ2و أ3و أ4و ج1وج2 د1ود2ود3ود4ود5و د6**

**الجدول الزمني التقييم:**

| | |
|---|---|
| **تقييم (1):** الامتحان التحريري | **الأسبوع السادس عشر** |

**ترجيح التقييم:**

| طريقة التقييم | الدرجات | النسب المئوية |
|---|---|---|
| الامتحان التحريري | 50 | %100 |
| الإجمالي | 50 | %100 |

## ز- التسهيلات اللازمة للتعليم و التعلم:

1- للمحاضرات: اللوحات (البيضاء) و السوداء و جهاز العرض المرئي (داتا شو).

## ي- قائمة المراجع:

**1- مذكرات:** مذكرة القسم

**2- كتب مقترحة**

أصول ومبادئ إدارة الأعمال

**3- دوريات علمية أو نشرات .... الخ**

التنظيم والإدارة

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**منسق المقرر: أ.د/ عزة أحمد الشربيني – كلية التكنولوجيا والتنمية-قسم إدارة الأعمال**

**التاريخ:**

## مصفوفة 1 إدارة أعمال

| | محتويات المقرر | نتائج التعلم المنشودة | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | المعرفة والفهم | | | | المهارات الفكرية | | مهارات عامة وتواصلية | | | | | |
| | | أ1 | أ2 | أ3 | أ4 | ج1 | ج2 | د1 | د2 | د3 | د4 | د5 | د6 |
| 1 | مفاهيم الإدارة والأعمال | x | | | | | | | | | | | |
| 2 | المتغيرات العالمية التي تؤثر على الصيدلي بعض المفاهيم الحديثة لمواجهتها | x | | | | | | | x | | | | |
| 3 | ثقافة المنظمة الملتزمة بالجودة | x | | | | | | | x | | | | |
| 4 | أخلاقيات الأعمال والمسئولية الإجتماعية للمنظمات | x | | | | | | | | x | | | |
| 5 | التنبؤ وبناء القدرة على الرؤيا المستقبلية | | x | | | x | | | | | | | x |
| 6 | التخطيط: طرق إعداد الخطط الاستراتيجية | | x | | | | | | | | | x | |
| 7 | أسس اتخاذ القرارات الذكية للصيدلي المتميز | | x | | | | | | | | x | | |
| 8 | إدارة الوقت كأداة لتحقيق التميز | | | x | | | x | | | | | x | |
| 9 | إدارة الازمات وطرق مواجهتها | | x | | | | x | | | | | | |
| 10 | دراسة جدوى إنشاء المشروع الجديد | | | | x | x | x | | | | | | x |
| 11 | طرق إدارة الصراع ومواجهتها | | | x | | | x | | | | | | |
| 12 | طرق الإدارة ضمن فريق العمل | | | x | | | x | x | | | | | |
| 13 | مهارات الاتصال داخل المنظمة | | x | | | | | | x | | | | |
| 14 | التنسيق وتنظيم الأعمال | | x | | | | | | | | | | |
| 15 | الرقابة كأداة لتحقيق الخطط المحددة -مراجعة | | x | | | | | | | | | | |

| مصفوفة 2 إدارة أعمال | | | | | | | | |
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| المعايير الأكاديمية المرجعية القومية (NARS) | نتائج التعلم المنشودة للبرنامج | نتائج التعلم المنشودة للمقرر | محتويات المقرر | المصدر | أساليب التعليم و التعلم | | | أسلوب التقييم |
| | | | | | المحاضرة | الدروس العملية | التعلم الذاتي | الامتحان التحريري |
| **2.1 Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.** | A6 | أ-1 | مفاهيم الإدارة والأعمال.<br>المتغيرات العالمية التي تؤثر على الصيدلي<br>بعض المفاهيم الحديثة لمواجهتها.<br>ثقافة المنظمة الملتزمة بالجودة.<br>أخلاقيات الأعمال والمسئولية الإجتماعية للمنظمات. | الكتاب | x | | | x |
| **2.18 Principles of management including financial and human resources** | A 37 | أ-2 | التنبؤ وبناء القدرة على الرؤيا المستقبلية.<br>التخطيط: طرق إعداد الخطط الاستراتيجية.<br>أسس اتخاذ القرارات الذكية للصيدلي المتميز.<br>إدارة الازمات وطرق مواجهتها.<br>مهارات الاتصال داخل المنظمة.<br>التنسيق وتنظيم الأعمال.<br>الرقابة كأداة لتحقيق الخطط المحددة. | الكتاب | x | | | x |

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| x | | | x | الكتاب | إدارة الوقت كأداة لتحقيق التميز.<br>طرق إدارة الصراع ومواجهتها.<br>طرق الإدارة ضمن فريق العمل. | أ-3 | A38 | **2.19 Principles of drug promotion, sales and marketing, business administration, accounting and pharmacoeconomics** |
| x | | | x | الكتاب | دراسة جدوى إنشاء المشروع الجديد. | أ-4 | | |
| x | | | x | الكتاب | التنبؤ وبناء القدرة على الرؤيا المستقبلية.<br>دراسة جدوى إنشاء المشروع الجديد. | ج-1 | C15 | **4.12 Apply the principles of pharmacoeconomics in promoting cost/effective pharmacotherapy** |
| x | | | x | الكتاب | إدارة الوقت كأداة لتحقيق التميز.<br>إدارة الازمات وطرق مواجهتها.<br>دراسة جدوى إنشاء المشروع الجديد.<br>طرق إدارة الصراع ومواجهتها.<br>طرق الإدارة ضمن فريق العمل. | ج-2 | | |
| x | | | x | الكتاب | طرق الإدارة ضمن فريق العمل. | د-1 | D4 | **5.3 Work effectively in a team.** |

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| | | | | | المتغيرات العالمية التي تؤثر على الصيدلي<br>بعض المفاهيم الحديثة لمواجهتها. ثقافة المنظمة الملتزمة بالجودة.<br>مهارات الاتصال داخل المنظمة. | د-2 | D6 | **5.4 Use numeracy, calculation and statistical methods as well as information technology tools** |
| x | | | x | الكتاب | أخلاقيات الأعمال والمسئولية الإجتماعية للمنظمات. | د-3 | D8 | **5.6 Adopt ethical, legal and safety guidelines** |
| x | | | x | الكتاب | أسس اتخاذ القرارات الذكية للصيدلي المتميز. | د-4 | D9 | **5.7 Develop financial, sales and market management skills** |
| x | | | x | الكتاب | التخطيط: طرق إعداد الخطط الاستراتيجية.<br>إدارة الوقت كأداة لتحقيق التميز. | د-5 | D10 | **5.8 Demonstrate creativity and time management abilities.** |
| x | | | x | الكتاب | التنبؤ وبناء القدرة على الرؤيا المستقبلية.<br>دراسة جدوى إنشاء المشروع الجديد. | د-6 | D12 | **5.10 Implement writing and thinking, problem-solving and decision- making abilities** |

## مصفوفة 3 مقرر إدارة الأعمال

| الأسبوع | محتويات المقرر | المصدر | أساليب التعليم و التعلم | | | أسلوب التقييم |
|---|---|---|---|---|---|---|
| | | | المحاضرة | الدروس العملية | التعلم الذاتي | الامتحان التحريري |
| 1 | مفاهيم الإدارة والأعمال | الكتاب | x | | | x |
| 2 | المتغيرات العالمية التي تؤثر على الصيدلي بعض المفاهيم الحديثة لمواجهتها | الكتاب | x | | | x |
| 3 | ثقافة المنظمة الملتزمة بالجودة | الكتاب | x | | | x |
| 4 | أخلاقيات الأعمال والمسئولية الإجتماعية للمنظمات | الكتاب | x | | | x |
| 5 | التنبؤ وبناء القدرة على الرؤيا المستقبلية | الكتاب | x | | | x |
| 6 | التخطيط: طرق إعداد الخطط الاستراتيجية | الكتاب | x | | | x |
| 7 | أسس اتخاذ القرارات الذكية للصيدلي المتميز | الكتاب | x | | | x |
| 8 | إدارة الوقت كأداة لتحقيق التميز | الكتاب | x | | | x |
| 9 | إدارة الازمات وطرق مواجهتها | الكتاب | x | | | x |
| 10 | دراسة جدوى إنشاء المشروع الجديد | الكتاب | x | | | x |
| 11 | طرق إدارة الصراع ومواجهتها | الكتاب | x | | | x |
| 12 | طرق الإدارة ضمن فريق العمل | الكتاب | x | | | x |

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|---|---|---|---|---|---|---|
| 13 | مهارات الاتصال داخل المنظمة | الكتاب | x | | | x |
| 14 | التنسيق وتنظيم الأعمال | الكتاب | x | | | x |
| 15 | الرقابة كأداة لتحقيق الخطط المحددة<br>-مراجعة | الكتاب | x | | | x |

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